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Application No. 09/429,939
Reply to final Office Action of July 6, 2006Patent
Attorney Docket No. 89003-44AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions of claims in the application.

Listing of Claims:

1-41. (Cancelled)

42. (New) A freeze control system for a spa, said freeze control system comprising:
- a) a temperature sensor suitable for obtaining a measurement associated to an ambient air temperature near the spa;
 - b) a spa controller in communication with said temperature sensor for receiving a signal conveying said measurement associated to the ambient air temperature near the spa, said spa controller being operative for:
 - i) processing said signal to derive a rate of purge data element, said rate of purge data element being associated to a certain ambient air temperature;
 - ii) at least in part on the basis of the rate of purge data element, repetitively causing at least one pump of the spa to be activated for a certain time period and then deactivated, such as to repetitively cause the at least one pump of the spa to run for the certain time period.
43. (New) A freeze control system as defined in claim 42, wherein processing said signal to derive the rate of purge data element includes selecting a rate of purge data element from a set of possible rates of purge data elements, each rate of purge data element in the set of possible rates of purge data elements having a respective rate value.

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44. (New) A freeze control system as defined in claim 42, wherein processing said signal to derive the rate of purge data element includes applying a correction factor to said signal conveying said measurement associated to the ambient air temperature near the spa.
45. (New) A freeze control system as defined in claim 42, wherein said certain time period is a pre-determined time period.
46. (New) A freeze control system as defined in claim 42, wherein said temperature sensor is positioned remotely from said spa controller.
47. (New) A freeze control system as defined in claim 46, wherein said temperature sensor is positioned in proximity to piping associated to the spa.
48. (New) A freeze control system as defined in claim 42, wherein said temperature sensor is positioned inside said spa controller.
49. (New) A freeze control system as defined in claim 42, wherein, at least in part on the basis of the rate of purge data element, said spa controller is operative for repetitively causing a water heater of the spa to be activated for a given time period and then deactivated, such as to repetitively cause the water heater of the spa to heat water flowing through the water heater for the given time period.
50. (New) A freeze control system as defined in claim 42, at least in part on the basis of the rate of purge data element, said spa controller is operative for repetitively causing a water blower of the spa to be activated for a given time period and then deactivated, such as to repetitively cause the water blower of the spa to run for the given time period.
51. (New) A spa system having water freeze control capabilities, said spa system comprising:

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- a) a spa tub for holding water;
- b) a water heater;
- c) spa piping interconnecting said spa tub and said water heater, said spa piping including at least one pump for circulating water between said water heater and said spa tub;
- d) a temperature sensor suitable for obtaining a measurement associated to an ambient air temperature near said spa system;
- e) a spa controller in communication with said temperature sensor for receiving a signal conveying said measurement associated to the ambient air temperature near said spa system, said spa controller being operative for:
 - i) processing said signal conveying said measurement associated to the ambient air temperature near said spa system to derive a rate of purge data element, said rate of purge data element being associated to a certain ambient air temperature;
 - ii) at least in part on the basis of the rate of purge data element, repetitively causing the at least one pump of the spa to be activated for a certain time period and then deactivated, such as to repetitively cause the at least one pump of the spa to run for the certain time period.

52. (New) A spa system as defined in claim 51, wherein processing said signal to derive the rate of purge data element includes selecting a rate of purge data element from a set of possible rates of purge data elements, each rate of purge data element in the set of possible rates of purge data elements having a respective rate value.

53. (New) A spa system as defined in claim 51, wherein processing said signal to derive a rate of purge data element includes applying a correction factor to said signal conveying said measurement associated to the ambient air temperature near said spa system.

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54. (New) A spa system as defined in claim 51, wherein said certain time period is a pre-determined time period.
55. (New) A spa system as defined in claim 51, wherein said temperature sensor is positioned remotely from said spa controller.
56. (New) A spa system as defined in claim 55, wherein said temperature sensor is positioned in proximity to the spa piping.
57. (New) A spa system as defined in claim 51, wherein said temperature sensor is positioned inside said spa controller.
58. (New) A spa system as defined in claim 51, wherein, at least in part on the basis of the rate of purge data element, said spa controller is operative for repetitively causing the water heater of the spa to be activated for a given time period and then deactivated, such as to repetitively cause the water heater of the spa to heat water flowing through the water heater for the given time period.
59. (New) A spa system as defined in claim 51, at least in part on the basis of the rate of purge data element, said spa controller is operative for repetitively causing the water blower of the spa to be activated for a given time period and then deactivated, such as to repetitively cause the water blower of the spa to run for the given time period.
60. (New) A method for preventing water from freezing in piping associated to a spa system, said method comprising:
 - a) obtaining a measurement associated to an ambient air temperature near the spa system;
 - b) processing said measurement to derive a rate of purge data element, said rate of purge data element being associated to a certain ambient air temperature;

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- c) at least in part on the basis of said rate of purge data element, repetitively causing at least one pump of the spa system to be activated for a certain time period and then deactivated.
61. (New) A method as defined in claim 60, wherein processing said measurement to derive the rate of purge data element includes selecting a rate of purge data element from a set of possible rates of purge data elements, each rate of purge data element in the set of possible rates of purge data elements having a respective rate value.
62. (New) A method as defined in claim 60, wherein processing said measurement to derive a rate of purge data element includes applying a correction factor to said measurement.
63. (New) A method as defined in claim 60, wherein said certain time period is a pre-determined time period.
64. (New) A method as defined in claim 60, said method comprising repetitively causing, at least in part by said rate of purge data element, the water heater of the spa to be activated for a given time period and then deactivated.
65. (New) A method as defined in claim 60, said method comprising repetitively causing, at least in part by said rate of purge data element, at least one air blower of the spa to be activated for a given time period and then deactivated.
66. (New) A freeze control system for a spa, said freeze control system comprising:
- a) means for obtaining a measurement associated to an ambient air temperature near the spa;
 - b) means for processing said measurement to derive a rate of purge data element;

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- c) means for repetitively causing, at least in part on the basis of the rate of purge data element, at least one pump of the spa to be activated for a certain time period and then deactivated, such as to repetitively cause the at least one pump of the spa to run for the certain time period.
67. (Ncw) A freeze control system for a spa, said freeze control system comprising:
- a) a temperature sensor suitable for obtaining a measurement associated to an ambient air temperature near the spa;
 - b) a spa controller in communication with said temperature sensor for receiving a signal conveying said measurement associated to the ambient air temperature near the spa, said spa controller being operative for repetitively causing at least one pump of the spa to be activated for a certain time period and then deactivated at a repetition rate conditioned at least in part on the basis of said measurement associated to an ambient air temperature near the spa.